

Remarks:

The Office Action contends that the specification was not amended to include (as the first sentence) a reference to the parent application whose filing date is relied upon for priority under 35 U.S.C. 120. In fact, the Application Transmittal filed with the application on June 1, 2001, amended the specification by inserting before the first line the sentence "This is a divisional of Application no. 09/048,468, filed March 26, 1998." Thus, Applicant respectfully contends that the claim to priority of Application No. 09/048,468 has been perfected.

Attached is a copy of the Application Transmittal filed with the application on June 1, 2001 (page 2 of which sets forth the above-noted amendment to the specification by insertion of the noted text before the first line), and a copy of the stamped return postcard received from the USPTO which bears a label assigning the present application the Application Number 09/872,684. The return postcard includes a reference to the Application Transmittal filed on June 1, 2001, and thus evidences that the Application Transmittal (along with the other application papers) was received by the Mail Room of the USPTO as of June 1, 2001.

The first paragraph on page 1 of the specification is hereby amended to supplement the reference to the parent application (Application No. 09/048,468) by indicating that the patent application has issued as U.S. Patent 6,496,869. This amendment could not have been filed within four months of the present application's filing date because the parent application did not issue until December 17, 2002, which was more than 18 months after the present application's filing date.

Applicant respectfully requests that U.S. Patent 5,655,140 and the two non-patent references cited in the Information Disclosure Statement (IDS) be made of record because the IDS complies with all applicable requirements, including all applicable requirements of 35 CFR 1.97 and 35 CFR 1.98. All other references cited in the IDS have been made of record. Although no copies of U.S. Patent 5,655,140 and the two non-patent references were enclosed with the IDS, the IDS explains that these references were previously cited by or submitted to the USPTO in a prior application (Application No. 09/048,468, filed March 26, 1998) relied upon in this application for an earlier filing date under 35 U.S.C. § 120. The three references were made of record in Application No. 09/048,468 (now issued as U.S. Patent 6,496,869). For this reason, 35 CFR 1.98 includes no requirement that copies of the

three references be filed with the IDS in order for them to be made of record in the present application (see 35 CFR 1.98(d)).

Claims 14-21 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite. In response, claims 14 and 16 are hereby amended. Support for the amendment to claim 14 can be found in the specification, for example, at page 6, lines 25-34. Applicant respectfully contends that the claims as amended satisfy the requirements of 35 U.S.C. 112, and in particular, specify the criterion used to perform the recited filtering operation.

Claims 14-21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,796,944 ("Hill") in view of Davie. Applicant respectfully contends that claims 14-21 as hereby amended are patentable over Hill in view of Davie for the following reasons.

Hill neither teaches nor suggests a method for operating a network interface including a media access control ("MAC") and a buffer manager coupled as recited in amended claim 14. The MAC recited in claim 14 is configured to filter incoming frame data to determine whether to accept such data. The buffer manager recited in claim 14 is operationally coupled with the recited MAC to receive frame data from the recited MAC (i.e., to receive any of the frame data that are passed to the buffer manager by the MAC). Thus, incoming frame data are received by the MAC (for filtering in the MAC) before the buffer manager receives the frame data from the MAC and before the buffer manager writes the frame data to the recited memory.

In contrast, the element of Hill's system which performs filtering of data received from a network is frame processor unit (FPU) 40 of Hill's Fig. 1, as taught by Hill at col. 13, lines 39-56. In Hill's system, however, the incoming frame data (e.g., from one of circuits 14 and 18 of Hill's Fig. 1) is received by Hill's buffer manager 22 ("buffer management ASIC" 22, to be referred to as "BMA" 22); not by FPU 40. The frame data received by BMA 22 is stored in buffer memory 28 under control of BMA 22 before FPU 40 filters the stored frame data in memory 28. More precisely, Hill's BMA 22 sends the source address and destination address of each packet (46) of incoming frame data to an address management ASIC (AMA) 32, and stores the data portion of the packet (and also the source address and destination address of the packet) in memory 28. Hill teaches at col. 5, lines 44-48 that BMA 22 uses information provided by AMA 32 to instruct frame processor unit 40 how to process the data stored in memory 28 (i.e., instructing FPU 40 to execute one of several programs stored in frame processor memory 44 to process the stored data). For example, Hill teaches

at col. 5, lines 53-62, that BMA 22 can instruct FPU 40 can execute a program to write (to memory 28) header information for frame data stored in memory 28 (for filling a “gap” in the stored frame data). Hill also teaches at col. 13, lines 48-56, that FPU 40 can “filter” frame data that has been stored in memory 28, in the sense that FPU can determine which frames of the stored data should be forwarded to a destination.

Thus, neither Hill’s FPU 40 nor any other element of Hill’s system is a MAC which filters incoming frame data (as recited in claim 14) in contrast with buffered frame data that has been stored in a buffer memory. Further, neither Hill’s BMA 22 nor any other element of Hill’s system is a buffer manager which receives frame data from a “filtering MAC” (a MAC of the type recited in claim 14, which filters incoming frame data) before causing the frame data to be stored in a memory coupled with the buffer manager. In contrast, Hill’s BMA 22 receives incoming frame data from one of circuits 14 and 18 before the incoming data has been received by a “filtering MAC.” The Examiner has not contended that any of Hill’s circuits 14 and 18 filters incoming frame data as recited in claim 14, and Applicant cannot identify any teaching or suggestion in Hill that circuits 14 or 18 perform such filtering.

Hill’s teaching of a method in which frame data received by BMA 22 are stored in buffer memory 28 under control of BMA 22 before FPU 40 filters the stored frame data in memory 28 is a teaching away from the invention of amended claim 14 rather than a teaching or suggestion of the steps of receiving and filtering incoming frame data in a MAC, passing the frame data from the MAC to a buffer manager if the filtering operation (performed by the MAC) results in a determination to accept said frame data, and writing the frame data from the buffer manager to a receive buffer memory, as recited in amended claim 14.

Applicant is also unable to identify in Davie any teaching or suggestion of a method for operating a network interface including a MAC and a buffer manager coupled as recited in claim 14, or a method in which incoming frame data are received and filtered in a MAC, passed from the MAC to a buffer manager if the filtering operation results in a determination to accept the frame data, and written from the buffer manager to a receive buffer memory, as recited in amended claim 14. The Examiner has not contended that such a teaching or suggestion is determinable from Davie.

Accordingly, amended claim 14 (and all claims that depend directly or indirectly therefrom) are patentable over Hill and Davie, whether read individually or in combination. Since no teaching or suggestion is determinable from art of record to perform a method

(including the steps recited in amended claim 14) for operating network interface including a MAC and a buffer manager coupled as recited in amended claim 14. Applicant respectfully contends that claims 1-14 as amended are patentable over the art of record.

Claims 14-21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 5,299,313 (“Petersen”) in view of U.S. Patent 5,815,501 (“Gaddis”). Applicant respectfully contends that claims 14-21 as hereby amended are patentable over Petersen in view of Gaddis for the following reasons.

Petersen teaches very generally at col. 1, lines 23-31, that a network interface controller can supply received data from a “media access controller ... through a FIFO buffer on a network interface controller card into a host managed receive area buffer” using DMA techniques. This teaching in Peterson does not amount to a teaching or suggestion of a method for operating a network interface including a media access control (MAC) and a buffer manager coupled as recited in amended claim 14, or a method in which incoming frame data are received and filtered in a MAC, passed from the MAC to a buffer manager if the filtering operation results in a determination to accept the frame data, and written from the buffer manager to a receive buffer memory, as recited in amended claim 14. The buffer manager recited in claim 14 is operationally coupled with a MAC to receive frame data from the MAC (i.e., any of the frame data that are passed to the buffer manager by the MAC). Thus, to practice the invention of claim 14, incoming frame data are received by the MAC and filtered in the MAC before the buffer manager receives any of the frame data from the MAC and before the buffer manager writes the frame data to the recited receive buffer memory. Peterson fails to teach or suggest receiving and filtering incoming frame data in a MAC, passing the frame data from the MAC to a buffer manager if the filtering operation (performed by the MAC) results in a determination to accept the frame data, and writing the frame data from the buffer manager to a receive buffer memory, as recited in amended claim 14.

Not only does Petersen’s very general teaching (discussed above) fail to teach or suggest the noted limitations of claim 14, but Petersen’s description of a network interface (and the manner in which it operates) with reference to Petersen’s Fig. 2 is a teaching away from the invention of claim 14 rather than a teaching or suggestion of the steps of receiving and filtering incoming frame data in a MAC, passing the frame data from the MAC to a buffer manager if the filtering operation (performed by the MAC) results in a determination

to accept said frame data, and writing the frame data from the buffer manager to a receive buffer memory, as recited in amended claim 14. In the interface of Petersen's Fig. 2, receiver 62 receives incoming frame data and asserts the data to "receive DMA module" 63. Module 63 "deposits" the data in a buffer in RAM 15 (RAM 15 is shown in Fig. 1) via RAM interface 50. As explained in Petersen at column 7, lines 5-28, multicast comparator 61 (an element distinct from elements 62 and 63) filters the incoming data, including by accessing an address table (stored in RAM 15) and comparing a destination address field of the incoming data with contents of the address table. If the filtering operation determines a mismatch between the destination address field and relevant contents of the address table, an incoming data frame may be rejected, but apparently not before at least some data of the incoming data frame have been written to the buffer in RAM 15. Applicant is unable to identify any teaching in Petersen that any of the other elements of Petersen's Fig. 2 (including elements 53, 54, 55, 57, 58, 59, and 60) receives data from a network and filters the received data as does the MAC recited in amended claim 14. Even though Petersen's comparator 61 performs a filtering operation on incoming data from a network (to determine whether to accept a frame of the incoming data), comparator 61 does not correspond to the recited MAC since comparator 61 does not selectively pass the data to a "buffer manager" if the filtering operation results in a determination to accept the data (so that the buffer manager can then write the data it receives to a receive buffer memory). On the contrary, Petersen apparently teaches away from the invention by teaching that incoming data should be written to a receive buffer memory (a buffer in RAM 15) independently of the result of any filtering operation performed by Petersen's Fig. 2 interface (e.g., the filtering operation performed by Petersen's comparator 61).

Applicant is also unable to identify in Gaddis any teaching or suggestion of a method for operating a network interface including a MAC and a buffer manager coupled as recited in amended claim 14, or a method in which incoming frame data are received and filtered in a MAC, passed from the MAC to a buffer manager if the filtering operation results in a determination to accept the frame data, and written from the buffer manager to a receive buffer memory, as recited in amended claim 14. The Examiner has not contended that such a teaching or suggestion is determinable from Gaddis. Even if Gaddis' dual-port memory 24 (shown in Fig. 3 of Gaddis) were somehow incorporated into the system of Petersen's Fig. 2 (e.g., to replace Petersen's RAM 15), the so-modified Petersen system would not include a

MAC and a buffer manager coupled as recited in amended claim 14, and would not operate by receiving and filtering incoming frame data in a MAC, passing the frame data from the MAC to a buffer manager if the filtering operation results in a determination to accept the frame data, and writing the frame data from the buffer manager to a receive buffer memory, as recited in amended claim 14.

Accordingly, amended claim 14 (and all claims that depend directly or indirectly therefrom) are patentable over Petersen and Gaddis, whether read individually or in combination. Since no teaching or suggestion is determinable from art of record to perform a method (including the steps recited in amended claim 14) for operating network interface including a MAC and a buffer manager coupled as recited in amended claim 14, Applicant respectfully contends that claims 1-14 as amended are patentable over the art of record.

In view of the discussion in Paragraphs 27 and 28 of the Office Action, Applicant is uncertain, whether any of the pending claims stands rejected under 35 U.S.C. 103 over Hill in view of U.S. 5,805,816 (Picazo). For the reasons set forth in the above discussion of Hill, Applicant respectfully contends that amended claim 14, and thus all claims that depend directly or indirectly therefrom, are patentable over Hill. Picazo, like Hill, fails to teach or suggest a method for operating a network interface including a media access control (MAC) and a buffer manager coupled as recited in amended claim 14, or a method in which incoming frame data are received and filtered in a MAC, passed from the MAC to a buffer manager if the filtering operation results in a determination to accept the frame data, and written from the buffer manager to a receive buffer memory, as recited in amended claim 14. Thus, amended claim 14 (and all claims that depend directly or indirectly therefrom) are patentable over Hill and Picazo, whether read individually or in combination.

In response to Paragraph 29 of the Office Action, Applicant acknowledges that each of several limitations recited in amended claim 14, if considered alone, was known in the art at the time the invention was made. However, Applicant observes that the Examiner has not taken Official Notice of a method for operating a network interface including a media access control (MAC) and a buffer manager coupled as recited in amended claim 14, or a method in which incoming frame data are received and filtered in a MAC, passed from the MAC to a buffer manager if the filtering operation results in a determination to accept the frame data, and written from the buffer manager to a receive buffer memory, as recited in amended claim 14. Applicant respectfully contends that amended claim 14 (and all claims that depend

directly or indirectly therefrom) are patentable over the art of record, including each teaching of which the Examiner has taken Official Notice, whether read individually or in combination. The Office Action includes no contention that amended claim 14 is unpatentable over the teachings of which the Examiner has taken Official Notice. Applicant respectfully contends that amended claim 14 is patentable (for the reasons set forth above) over the above-discussed cited references and the teaching of which the Examiner has taken Official Notice, whether considered in individually or in combination, and that the above-discussed teaching (in Hill and Petersen) away from the invention of amended claim 14 is evidence which creates on its face a reasonable doubt that it would be appropriate to take Official Notice of the invention of amended claim 14.

Respectfully submitted,

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